1. Crown of the Continent

Profile of a Treasured Landscape

Calling a place the "Crown of the Continent" is high praise. The phrase was coined in 1901 by conservationist and author George Bird Grinnell. Even more dramatic and ancient is the Blackfeet name for the land: "Miistakis," which translates to the "Backbone of the World."

Millions of years of geologic deposition, uplift, and glaciation have resulted in the spectacular landscape we know today. The Crown of the Continent has been home to people for more than 10,000 years, and home to a changing complex of plants and animals for far longer than that.

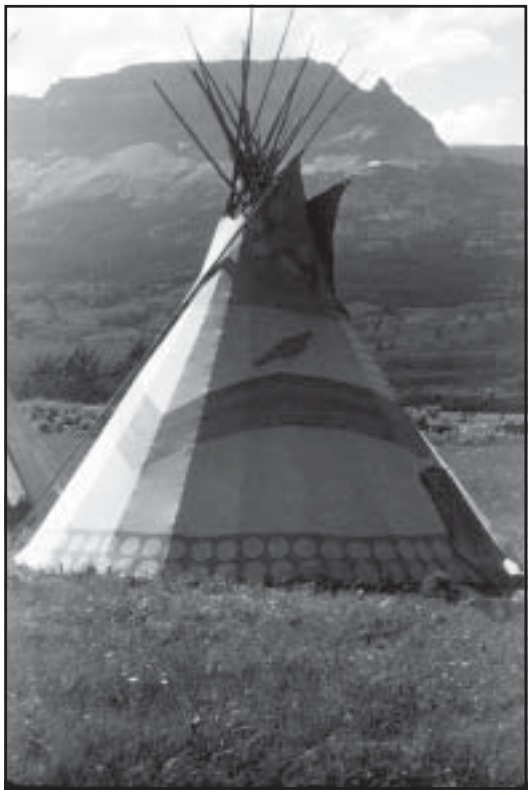
The Crown of the Continent covers approximately 44,000 square kilometers (16,000 square miles), or about twice the size of Massachusetts. The ecosystem is split roughly in half lengthwise (north to south) by the Continental Divide, the high ridge that separates the Atlantic and Pacific ocean drainages of North America. The northernmost boundaries are the headwaters of the Elk River in British Columbia and the Highwood River in Alberta, near Highwood Pass. The southernmost boundary is Montana's Blackfoot River Valley. The eastern periphery of the ecosystem in Alberta and Montana extends slightly into the Great Plains. Other mountain ranges of Montana and British Columbia, such as the Salish Mountains, make up the western fringe of the ecosystem.

Folded within the Crown of the Continent are mountain ranges including the Livingstone, Macdonald, Lewis, Clark, Whitefish, Galton, Lizard, Swan, Mission, Flathead, and Livingston ranges. Between these ranges are narrow river valleys like the Elk, the three forks of the Flathead, and the Swan. Larger river systems begin in the

Crown of the Continent and flow across North America. More than 60% of the Crown of the Continent is public property. About 30% is protected by law in a pristine state.

If you ask what is so special about the Crown of the Continent, be prepared to receive many different answers.

A geologist may say it's special for its ancient rocks and glacially carved mountains. A biologist may explain that the Crown of the Continent is special for its full theater of native wildlife, including rare species such as grizzly bear, wolf, and lynx, and more than a thousand species of plants. A tourist may marvel at its spectacular mountain scenery and wilderness solitude. A Blackfoot or Kootenai traditionalist may explain her connection to the land with an ancient story. A resident may explain that it is home and a place to work, live, and play within a spectacular setting. Others may applaud the Crown of the Continent's pure air and water, free-flowing rivers, beautiful native fish, breathtaking bird migrations, or fascinating human history and vibrant current culture. All of these images are true, but none alone is complete.



The mountains are sacred in the traditions of the native people here, who have long sought and celebrated the land's spiritual power. In modern times, state, provincial, and national governments in Canada and the United States, as well as the United Nations, have recognized the Crown of the Continent. The Alberta and Montana Rotary Clubs proposed the Waterton-Glacier International Peace Park in 1931, as a symbolic recognition of the friendship and goodwill between Canada and the United States. It was established as the world's first international peace park in 1932, written into law by both countries.

In 1976, the United Nations Educational, Scientific and Cultural Organization (UNESCO) named Glacier National Park a Biosphere Reserve. (The Biosphere Reserve program recognizes the main natural regions of the world and seeks to achieve greater understanding of the relationship between humans and the natural environment by integrating the natural and social sciences.) Waterton Lakes National Park was also named a Biosphere Reserve in 1979. Coram Experimental Forest is yet another Biosphere Reserve within the Crown of the Continent.

In 1995, UNESCO recognized Waterton-Glacier International Peace Park as a World Heritage Site, taking its place alongside the Galapagos Islands, the Serengeti Plain, and the Great Barrier Reef. The World Heritage Site designation recognizes cultural and natural heritage sites that have outstanding global value. This includes examples of outstanding ongoing ecological and biological processes, natural beauty, and international cooperation and goodwill.

These formal titles indicate that some-

thing grand is going on here. The natural processes in the Crown of the Continent continue to unfold, largely unimpeded by human tinkering. The physical components of this place—the composition of the rocks, the rainfall and snowmelt, the sunshine—interact with the living plants and animals without great human disturbances. In short, the Crown of the Continent is a vibrant, functional ecosystem.

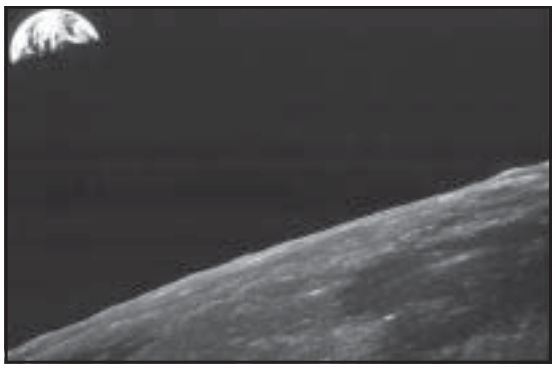
This document aims to describe the Crown of the Continent as an ecosystem based on natural communities and processes, rather than political preferences. It will focus on the ecology of the place—how the biological and physical components are connected. Jurisdictions and boundaries will be less important than the way the water flows, the wind blows, and the wildlife roams. An attempt will be made to look beyond boundaries to see a natural world, of which we are all part and to which we are all linked. The Crown of the Continent is more than a preserved vignette of the past. It is a place to learn about the present and perhaps a window through which we can glimpse the future.

What is an ecosystem?

An ecosystem is commonly defined as "An ecological community, together with its environment, functioning as a unit."

An ecosystem includes physical and biological components and natural processes—not merely the food chain of plants and animals, but also non-living components, such as the types of rocks, the soil, the natural chemistry of the water, the movement of weather systems, precipitation and climate, and the cycle of energy, flowing from sun, to grass, to animals, to predators, and back to the earth.

A pond, a meadow, or even a rotten log can each be considered as a distinct ecosystem, but they are also parts of larger ecosystems, such as a forest or a watershed. In a similar way, forests and watershed ecosystems are also parts of even larger ecosystems—entire mountain ranges, or even continents. On one scale, the Earth itself can be considered a distinct ecosystem, since all its parts function interdependently. But even the whole planet is not a complete ecological unit, since the Earth depends on the sun for energy.



Consider the ecosystem of a mountain lake. Its non-living components include the snowpack and the rock basin which collects the water from its annual snow melt and runoff. In addition to melting the snow, sunlight provides energy to microscopic

plankton. The plankton feeds tiny invertebrates in the water, which, along with the temperature and chemistry of the lake, helps determine how much life the water can support. The plankton are fed upon by small fish, which in turn are eaten by larger fish like bull trout. On a slightly expanded level, the lake ecosystem also includes the tributary streams where the bull trout spawn and predators, such as river otters and human anglers, that eat the trout.

But the lake's ecosystem is not confined even to its watershed. Bald eagles and common loons may raise their young at the lake, but in winter those birds may migrate to Mexico or Florida. So a mountain lake in the Crown of the Continent is a small part of a continent-wide ecosystem.

Ecosystems can be considered on a microscopic, a continental, or even a cosmic scale. For human convenience in description, we define ecosystems and put borders around them. But such boundaries are always imperfect and permeable.

Political boundaries further complicate our understanding of an ecosystem. Grizzly bears and songbirds, for example, are dual citizens, roaming freely over international borders. Radio-collared wolves have been tracked from Montana to Alberta and British Columbia and back. In one jurisdiction, a wolf is a protected, endangered species,

in another, a hunter's trophy, and in another, an agricultural pest.

A grizzly bear may live in the Belly River drainage of Glacier National Park, eating riverside grasses in the spring, then moving upslope to feed on huckleberries in summer, before digging a hibernation den in the high mountains in late autumn. This bear may never leave the mountains, but its ecosystem reaches far beyond the animal's home range. In summer, the bear may feed on thousands of army cutworm moths, which retreat to the cool, high mountains from distant farm lands where they hatch. So the ecosystem to which the grizzly belongs includes farms hundreds of kilometers away from the bears themselves.

An even more dramatic example is the Swainson's hawk, frequently seen hunting small rodents and large insects on the Rocky Mountain Front. This bird breeds in Montana and Alberta, where it feeds mainly on rodents. It migrates to the plains of Argentina during the North American winter. In Argentina, Swainson's hawks have died en masse from pesticide poisoning. Eventually, such die-offs could mean fewer Swainson's hawks—and more rodents—in the Crown of the Continent, a hemisphere away.

Ecosystems challenge us, because they force humans to think beyond the lines and categories by which we usually conceptualize and organize the world. Ecosystems are directly relevant to us, because we live in and are a component of the ecosystems that sustain our lives.

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